

Author Index

- Aernoudt, E., 125, 139
 Ait Saadi, B., L1
 Arkens, O., 125, 139
 Arsenault, R. J., 77

 Baker, I., 147
 Bartolucci Luyckx, S., L21
 Baumvol, I. J. R., 267, 279, 285
 Bowen, H. K., 303

 Čadek, J., 65
 Crimp, M. A., 27

 da Silveira, E. F., 267, 279
 Davies, T. J., 109
 de Keijser, Th. H., 17
 Delaey, L., 125, 139
 Dionisio, P. H., 267, 279, 285
 dos Santos, C. A., 285
 Dowling, N. E., 99
 Drobnik, A., 321

 Efferding, L. E., 205

 Franetovic, V., 231
 Fratesi, R., 51
 Freire, Jr., F. L., 267

 Gaydosh, D. J., 147
 Gerland, M., L1
 Goda, S., 259
 Gutmanas, E. Y., L5

 Holroyd, N. J. H., 185
 Huang, X. B., 159

 Itoh, H., 303
 Iyyer, N. S., 99

 Kamaraj, M., 89
 Kameda, J., 311
 Kanakis, C., 197
 Keeton, A. R., 205
 Kingon, A. I., L5
 Klemm, P., 321
 Koczak, M. J., 117
 Kohler, V., 185
 Krishnan, R., L25

 Lacombe, P., 1
 Lal, R., L25
 Lange, W. J., 205
 Lew, E.-W., 253
 Lewandowski, J. J., 185
 Liu, C. Y., 259
 Liu, Yi-Lin, 125, 139
 Longworth, H. P., 213

 Mansour-Gabr, M., 247
 Martin, J. W., 41
 McNelley, T. R., 253
 Mikkola, D. E., 27, 213
 Mittemeijer, E. J., 17
 Moschos, M., L17
 Murakami, K., 259
 Murty, G. S., 117

 Nabil Bassim, M., 159

 Okamoto, T., 259
 Orlová, A., L11
 Ovri, J. E. O., 109

 Papastaikoudis, C., 197
 Papathanassopoulos, K., 197
 Parish, M. V., 303

 Quadrini, E., 51

 Radhakrishnan, V. M., 89
 Raj, S. V., 57
 Ramakrishnan, P., L25
 Robinson, S. L., 7
 Roventi, G., 51
 Rozniakowski, K., 321
 Ryntz, E. F., 231

 Schreiner, W. W., 267, 279, 285
 Shea, M. M., 231
 Sinharoy, S., 205
 Smith, B. C., 27
 Spitzig, W. A., 311
 Steinmetz, J., 247
 Steinmetz, P., 247
 Stone, N. A., L5
 Svoboda, J., 65

 Teixeira, S. R., 267, 279, 285
 Tekin, A., 41
 Travitzky, N. A., L5

 van der Pers, N. M., 17
 van Rooyen, M., 17
 Vasconcellos, M. A. Z., 279
 Vekinis, G., L21
 Vilasi, M., 247
 Violan, P., L1

 Wasserbach, W., 167
 Wayman, C. M., 295
 Wetherhold, R. C., L17
 Wojtatowicz, T. W., 321
 Wu, S. B., 77
 Wu, S. K., 295



Subject Index

Alloys

- application of a thermomechanical process for the grain refinement of aluminum alloy 7475, 253
- effects of lead on the sustained-load cracking of Al-Mg-Si alloys at ambient temperatures, 185
- influence of Guinier-Preston zones on the low field Hall coefficient of Al-Cu alloys, 197
- investigation of region I of a superplastic Al-Zn-Mg-Cu-Mn alloy, 117
- structure and oxidation behaviour at 850 °C of the $M_{4.25}Al_{0.75}Y$ intermetallic phase alloy ($M = Ni + Co + Cr$), 247
- substructure development and mechanical properties in cold-rolled aluminium alloy 3004
 - II: mechanical properties, 139
- substructure development and mechanical properties of cold-rolled aluminium alloy 3004
 - I: substructure development, 125
- transmission electron microscopy studies of the martensitic transformation in a $Ti_{50}Ni_{45}Au_5$ alloy, 295

Aluminas

- effect of rapid cooling on toughness and erosion resistance of commercial aluminas, L5

Aluminium

- effects of lead on the sustained-load cracking of Al-Mg-Si alloys at ambient temperatures, 185
- flow and fracture of Fe-Al, 147
- influence of Guinier-Preston zones on the low field Hall coefficient of Al-Cu alloys, 197
- interdiffusion and reaction in the Fe-Al bilayer:
 - III: phase characterization of furnace-annealed samples, 285
- interdiffusion and reaction in the Fe-Al bilayer:
 - I: Rutherford backscattering analysis of furnace-annealed samples, 267
- interdiffusion and reaction in the Fe-Al bilayer:
 - II: sheet resistivity of furnace-annealed samples, 279
- investigation of region I of a superplastic Al-Zn-Mg-Cu-Mn alloy, 117
- strength differential and Bauschinger effects in SiC-Al composites, 77
- structure refinement and improved mechanical properties of Al-20wt.%Si by rapid solidification in conjunction with strontium modification, 17
- substructure development and mechanical properties in cold-rolled aluminium alloy 3004
 - II: mechanical properties, 139
- substructure development and mechanical properties of cold-rolled aluminium alloy 3004
 - I: substructure development, 125

Aluminium alloy 7475

- application of a thermomechanical process for the grain refinement of aluminium alloy 7475, 253

Austempered nodular iron

- transmission electron microscopy study of austempered nodular iron: influence of silicon content, austenitizing time and austempering temperature, 231

Austenitizing time

- transmission electron microscopy study of austempered nodular iron: influence of silicon content, austenitizing time and austempering temperature, 231

Bauschinger effects

- strength differential and Bauschinger effects in SiC-Al composites, 77

Castings

- feeding to castings from a riser in a pasty state, 259

Cavity growth

- numerical study of intergranular cavity growth in creep, 65

Cobalt

- effects of cyclic precompression on the magnetic coercivity of WC-6wt.%Co, L21

Commercial aluminas

- effect of rapid cooling on toughness and erosion resistance of commercial aluminas, L5

Composites

- strength differential and Bauschinger effects in SiC-Al composites, 77
- thermal gradient effects in direct resistance heated metal matrix composites, L17

Compression

- diametral compression of silicon nitride, 109

Cooling

- effect of rapid cooling on toughness and erosion resistance of commercial aluminas, L5

Copper

- influence of Guinier-Preston zones on the low field Hall coefficient of Al-Cu alloys, 197
- investigation of region I of a superplastic Al-Zn-Mg-Cu-Mn alloy, 117
- substructure development in shock-loaded Cu-8.7Ge and copper: the role of temperature, grain size and stacking fault energy, 27

Corduroy contrast

- corduroy contrast in type 316 L stainless steel after cyclic plastic deformation, L1

Corrosion

- conclusions on the International Symposium on High Temperature Corrosion of Marseille, July 7-11, 1987, 1

Crack

- fatigue crack growth and closure at high cyclic strains, 99
- fatigue crack growth behaviour of MA6000, 41

Cracking

effects of lead on the sustained-load cracking of Al-Mg-Si alloys at ambient temperatures, 185

Crack growth

effect of temperature on crack growth in type 304 stainless steel, 89

Creep

grain size dependence of Harper-Dorn creep, 57
high stresses in subboundaries and unknitting of dislocations from subboundaries in creep, L11
numerical study of intergranular cavity growth in creep, 65

Croloy

permeation of deuterium through double-walled Croloy tubes, 205

Crystals

long-range internal stresses and low-temperature phonon scattering in plastically deformed niobium and tantalum single crystals, 167

Cyclic precompression

effects of cyclic precompression on the magnetic coercivity of WC-6wt.%Co, L21

Deuterium

permeation of deuterium through double-walled Croloy tubes, 205

Diametral compression

diametral compression of silicon nitride, 109

Dislocations

high stresses in subboundaries and unknitting of dislocations from subboundaries in creep, L11

Dislocation structures

investigation of dislocation structures in pre-deformed AISI 4340 steel, 159

Ductile fracture

effect of hydrogen on ductile fracture in a porous iron, 311

Erosion resistance

effect of rapid cooling on toughness and erosion resistance of commercial aluminas, L5

Fatigue crack growth

fatigue crack growth and closure at high cyclic strains, 99
fatigue crack growth behaviour of MA6000, 41

Field Hall coefficient

influence of Guinier-Preston zones on the low field Hall coefficient of Al-Cu alloys, 197

Flow

flow and fracture of Fe-Al, 147

Fracture

effect of hydrogen on ductile fracture in a porous iron, 311
flow and fracture of Fe-Al, 147

Furnace-annealed samples

interdiffusion and reaction in the Fe-Al bilayer:
III: phase characterization of furnace-annealed samples, 285
interdiffusion and reaction in the Fe-Al bilayer:
I: Rutherford backscattering analysis of furnace-annealed samples, 267
interdiffusion and reaction in the Fe-Al bilayer:
II: sheet resistivity of furnace-annealed samples, 279

Germanium

substructure development in shock-loaded Cu-8.7Ge and copper: the role of temperature, grain size and stacking fault energy, 27

Grain refinement

application of a thermomechanical process for the grain refinement of aluminum alloy 7475, 253

Grain size

grain size dependence of Harper-Dorn creep, 57
substructure development in shock-loaded Cu-8.7Ge and copper: the role of temperature, grain size and stacking fault energy, 27

Guinier-Preston zones

influence of Guinier-Preston zones on the low field Hall coefficient of Al-Cu alloys, 197

Gypsum structure

possibility of the application of a laser method to evaluate the influence of the gypsum structure on the thermal diffusivity, 321

Hafnium

effects of alloying additions of titanium, molybdenum, silicon, hafnium and tantalum on the microstructure of iron aluminides near Fe₃Al, 213

Harper-Dorn creep

grain size dependence of Harper-Dorn creep, 57

Helium

tritium and helium effects on plastic deformation in AISI 316 stainless steel, 7

High temperature corrosion

conclusions on the International Symposium on High Temperature Corrosion of Marseille, July 7-11, 1987, 1

Hydrogen

effect of hydrogen on ductile fracture in a porous iron, 311

Hydrogen embrittlement

effect of the surface roughness and the load application mode on hydrogen embrittlement, 51

Interdiffusion

interdiffusion and reaction in the Fe-Al bilayer:
III: phase characterization of furnace-annealed samples, 285
interdiffusion and reaction in the Fe-Al bilayer:
I: Rutherford backscattering analysis of furnace-annealed samples, 267
interdiffusion and reaction in the Fe-Al bilayer:
II: sheet resistivity of furnace-annealed samples, 279

Intermetallic phase alloy

structure and oxidation behaviour at 850 °C of the M_{4.25}Al_{0.75}Y intermetallic phase alloy (M = Ni + Co + Cr), 247

Iron

effect of hydrogen on ductile fracture in a porous iron, 311
flow and fracture of Fe-Al, 147
interdiffusion and reaction in the Fe-Al bilayer:
III: phase characterization of furnace-annealed samples, 285
interdiffusion and reaction in the Fe-Al bilayer:
I: Rutherford backscattering analysis of furnace-annealed samples, 267

- interdiffusion and reaction in the Fe-Al bilayer:
 II: sheet resistivity of furnace-annealed samples, 279
 transmission electron microscopy study of austempered nodular iron: influence of silicon content, austenitizing time and austempering temperature, 231
- Iron aluminides
 effects of alloying additions of titanium, molybdenum, silicon, hafnium and tantalum on the microstructure of iron aluminides near Fe₃Al, 213
- Laser method
 possibility of the application of a laser method to evaluate the influence of the gypsum structure on the thermal diffusivity, 321
- Lead
 effects of lead on the sustained-load cracking of Al-Mg-Si alloys at ambient temperatures, 185
- Load application
 effect of the surface roughness and the load application mode on hydrogen embrittlement, 51
- Magnesium
 effects of lead on the sustained-load cracking of Al-Mg-Si alloys at ambient temperatures, 185
 investigation of region I of a superplastic Al-Zn-Mg-Cu-Mn alloy, 117
- Magnetic coercivity
 the effects of cyclic precompression on the magnetic coercivity of WC-6wt.%Co, L21
- Manganese
 investigation of region I of a superplastic Al-Zn-Mg-Cu-Mn alloy, 117
- Martensitic transformation
 transmission electron microscopy studies of the martensitic transformation in a Ti₅₀Ni₄₅Au₅ alloy, 295
- Mechanical properties
 structure refinement and improved mechanical properties of Al-20wt.%Si by rapid solidification in conjunction with strontium modification, 17
 substructure development and mechanical properties in cold-rolled aluminium alloy 3004
 II: mechanical properties, 139
- Metal matrix composites
 thermal gradient effects in direct resistance heated metal matrix composites, L17
- Microstructure
 effects of alloying additions of titanium, molybdenum, silicon, hafnium and tantalum on the microstructure of iron aluminides near Fe₃Al, 213
- Molybdenum
 effects of alloying additions of titanium, molybdenum, silicon, hafnium and tantalum on the microstructure of iron aluminides near Fe₃Al, 213
- Niobium
 long-range internal stresses and low-temperature phonon scattering in plastically deformed niobium and tantalum single crystals, 167
- Oxidation behaviour
 structure and oxidation behaviour at 850 °C of the M_{4.25}Al_{0.75}Y intermetallic phase alloy (M = Ni + Co + Cr), 247
- Particle packing
 particle packing of BaTiO₃ powders in aqueous solutions, 303
- Pasty state
 feeding to castings from a riser in a pasty state, 259
- Phase characterization
 interdiffusion and reaction in the Fe-Al bilayer:
 III: phase characterization of furnace-annealed samples, 285
- Phonon scattering
 long-range internal stresses and low-temperature phonon scattering in plastically deformed niobium and tantalum single crystals, 167
- Plastic deformation
 corduroy contrast in type 316 L stainless steel after cyclic plastic deformation, L1
 tritium and helium effects on plastic deformation in AISI 316 stainless steel, 7
- Powders
 particle packing of BaTiO₃ powders in aqueous solutions, 303
 preparation and characterization of submicron reactive PZT, powders, L25
- Riser
 feeding to castings from a riser in a pasty state, 259
- Rutherford backscattering analysis
 interdiffusion and reaction in the Fe-Al bilayer:
 I: Rutherford backscattering analysis of furnace-annealed samples, 267
- Sheet resistivity
 interdiffusion and reaction in the Fe-Al bilayer:
 II: sheet resistivity of furnace-annealed samples, 279
- Silicon
 effects of alloying additions of titanium, molybdenum, silicon, hafnium and tantalum on the microstructure of iron aluminides near Fe₃Al, 213
 effects of lead on the sustained-load cracking of Al-Mg-Si alloys at ambient temperatures, 185
 structure refinement and improved mechanical properties of Al-20wt.%Si by rapid solidification in conjunction with strontium modification, 17
 transmission electron microscopy study of austempered nodular iron: influence of silicon content, austenitizing time and austempering temperature, 231
- Silicon carbide
 strength differential and Bauschinger effects in SiC-Al composites, 77
- Silicon nitride
 diametral compression of silicon nitride, 109
- Solidification
 structure refinement and improved mechanical properties of Al-20wt.%Si by rapid solidification in conjunction with strontium modification, 17

Stacking fault

- substructure development in shock-loaded Cu-8.7Ge and copper: the role of temperature, grain size and stacking fault energy, 27

Stainless steel

- corduroy contrast in type 316 L stainless steel after cyclic plastic deformation, L1
- effect of temperature on crack growth in type 304 stainless steel, 89
- tritium and helium effects on plastic deformation in AISI 316 stainless steel, 7

Steel

- investigation of dislocation structures in predeformed AISI 4340 steel, 159

Strains

- fatigue crack growth and closure at high cyclic strains, 99

Strength differential

- strength differential and Bauschinger effects in SiC-Al composites, 77

Strontium

- structure refinement and improved mechanical properties of Al-20wt.%Si by rapid solidification in conjunction with strontium modification, 17

Stresses

- high stresses in subboundaries and unknitting of dislocations from subboundaries in creep, L11
- long-range internal stresses and low-temperature phonon scattering in plastically deformed niobium and tantalum single crystals, 167

Subboundaries

- high stresses in subboundaries and unknitting of dislocations from subboundaries in creep, L11

Submicron reactive PZT powders

- preparation and characterization of submicron reactive PZT, powders, L25

Substructure development

- substructure development and mechanical properties of cold-rolled aluminium alloy 3004 I: substructure development, 125
- substructure development in shock-loaded Cu-8.7Ge and copper: the role of temperature, grain size and stacking fault energy, 27

Surface roughness

- the effect of the surface roughness and the load application mode on hydrogen embrittlement, 51

Tantalum

- effects of alloying additions of titanium, molybdenum, silicon, hafnium and tantalum on the microstructure of iron aluminides near Fe₃Al, 213

- long-range internal stresses and low-temperature phonon scattering in plastically deformed bionium and tantalum single crystals, 167

Thermal diffusivity

- on the possibility of the application of a laser method to evaluate the influence of the gypsum structure on the thermal diffusivity, 321

Thermal gradient effects

- thermal gradient effects in direct resistance heated metal matrix composites, L17

Thermomechanical process

- application of a thermomechanical process for the grain refinement of aluminum alloys 7475, 253

Titanium

- effects of alloying additions of titanium, molybdenum, silicon, hafnium and tantalum on the microstructure of iron aluminides near Fe₃Al, 213

Toughness

- effect of rapid cooling on toughness and erosion resistance of commercial aluminas, L5

Transmission electron microscopy

- transmission electron microscopy study of austempered nodular iron: influence of silicon content, austenitizing time and austempering temperature, 231
- transmission electron microscopy studies of the martensitic transformation in a Ti₅₀Ni₄₅Au₅ alloy, 295

Tritium

- tritium and helium effects on plastic deformation in AISI 316 stainless steel, 7

Tungsten carbide

- the effects of cyclic precompression on the magnetic coercivity of WC-6wt.%Co, L21

Zinc

- investigation of region I of a superplastic Al-Zn-Mg-Cu-Mn alloy, 117

